AL-TANZIM
Jurnal Manajemen Pendidikan Islam
e-ISSN : 2549-5720
p-ISSN : 2549-3663

Al-Tanzim: Jurnal Manajemen Pendidikan Islam
Vol. 07 No. 04 (2023) : 1191-1201
Available online at https://ejournal.unuja.ac.id/index.php/al-tanzim/index

Acceptance of Distance Learning Technology in Technology-Based Learning Management

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DOI: http://doi.org/10.33650/al-tanzim.v7i4.5945
Received: 02 May 2023; Recieved in Revised Form 12 September 2023, Accepted: 23 October 2023, Available online: 06 November 2023

Abstract:

The Technology Acceptance Model (TAM) describes the factors that influence the acceptance and adoption of technology by individuals. In education management, TAM is used to understand how educators, students, and administrative staff respond to the use of technology in the educational process. The application of the Technology Acceptance Model in education management is to help educational institutions plan, implement, and support the use of technology more effectively, taking into account psychological factors and user perceptions. The variables influencing technology acceptance are Perceived Ease of Use, Perceived Usefulness, Attitude Toward Technology, and Intention to Use. This study examines the factors that influence the acceptance of technology by UT postgraduate students toward using information technology in distance learning. The research results are used to develop distance education management, especially in developing internet technology-based learning. The results show that the variables measured have a significant effect on the use of distance learning technology. The Behavioral Intention to Use variable has the most significant influence on Actual Use (AU), followed by the influence of Perceived Ease of Use (PEU) on Attitude Toward Using (ATU) and Perceived Usefulness (PU) on Attitude Toward Using (ATU).

Keywords: *Open University, Technology Acceptance Models, Technology Based Learning Management*

Abstrak:

Technology Acceptance Model (TAM) menggambarkan faktor-faktor yang mempengaruhi penerimaan dan adopsi teknologi oleh individu. Dalam konteks manajemen pendidikan, TAM digunakan untuk memahami bagaimana pendidik, peserta didik, dan tenaga administrasi menyikapi penggunaan teknologi dalam proses pendidikan. Penerapan Model Penerimaan Teknologi dalam manajemen pendidikan membantu lembaga pendidikan merencanakan, menerapkan dan mendukung penggunaan teknologi secara lebih efektif, dengan mempertimbangkan faktor psikologis dan persepsi pengguna. Variabel yang mempengaruhi penerimaan teknologi adalah Perceived Ease of Use, Perceived Effectiveness, Attitude Toward Technology, dan Intention to Use. Penelitian ini bertujuan untuk menguji faktor-faktor yang mempengaruhi penerimaan teknologi mahasiswa pascasarjana UT terhadap pemanfaatan teknologi informasi dalam pembelajaran jarak jauh. Hasil penelitian digunakan untuk mengembangkan manajemen pendidikan jarak jauh khususnya dalam pengembangan pembelajaran berbasis teknologi internet. Hasil penelitian menunjukkan bahwa variabel-variabel yang diukur berpengaruh signifikan terhadap penggunaan teknologi pembelajaran jarak jauh. Variabel Behavioral Intention to Use mempunyai pengaruh yang paling besar terhadap Actual Use (AU), disusul pengaruh Perceived Ease of Use (PEU) terhadap Attitude Toward Menggunakan (ATU) dan Perceived Effectiveness (PU) terhadap Attitude Toward Menggunakan (ATU).

Kata Kunci: *Universitas Terbuka, Model Penerimaan Teknologi, Manajemen Pembelajaran Berbasis Teknologi*

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Please cite this article in APA style as:
Rosita, T. Fatmasari, R. (2023). Acceptance of Distance Learning Technology in Technology-Based Learning Management. *Al-Tanzim: Jurnal Manajemen Pendidikan Islam*, 7(4), 1191-1201.

INTRODUCTION

Technology-based learning management, often called learning management systems (LMS) or e-learning platforms, is a comprehensive approach to managing and delivering educational and training content through digital technology. This approach utilizes various technological tools and software to enhance the learning experience for students, employees, or scholars. The components and aspects of technology-based learning management are learning management systems, content creation and delivery courses, accessibility and clutter, personalization, assessment and feedback, mobile learning, and AI and machine learning. Meanwhile, research states that LMS has been widely used as a learning medium, so research is needed to determine trends in its development (Prahani et al., 2022).

The Open University (UT) is a pioneering state university providing distance higher education based on technology-based learning management. UT uses a technology-based learning management system (LMS) to organize its educational programs efficiently and effectively.

Meanwhile, research on LMS has been widely carried out. Whereas technology is an essential aspect of most curricula in schools or universities, adapting LMS to higher education or other levels is a significant concern in implementing digital-based learning processes(Ayouni et al., 2021; Dzuranin et al., 2018; Kaewsaiha & Chanchalor, 2021; Oudeweetering & Voogt, 2018; Picatoste et al., 2018; Williams, 2019).

Technology-based Learning management systems have an essential role in the success of the open university. Enabling it to provide accessible, flexible, and efficient online education for a diverse group of learners. These systems deliver course content, facilitate interactions, assess student progress, and manage educational resources. The learning materials provided by the Open University to support student independence in learning are learning materials supported by information technology. All registered UT students can download this learning material via the website. UT's Strategic Plan focuses on student services as its core business. Student services are provided in the form of academic services and non-academic services. UT academic services include a) registration, b) face-to-face and distance tutoring via radio, television, and the Internet, and c) academic consultation. Meanwhile, non-academic services are provided in the form of a) information services, b) learning assistance, c) academic guidance, d) academic administration, d) customer complaints, and e) libraries. This service is intended to help students overcome academic and academic administration problems while studying at UT.

As a support service for academic services, UT also provides student services in the form of administrative services, which are focused on assisting students in registering, obtaining teaching materials, transferring credits, and other things that can influence the student's learning process. Based on UT's strategic plan, academic and non-academic service aspects are the focus of UT's

development. Academic aspects include student services, the provision of teaching materials, and the process of evaluating learning outcomes. Meanwhile, non-academic aspects include a) the range and quality of educational services and b) the internal management of the organization.

In practice, not all students can learn well through technology. Acceptance of information technology will be different for each person. One model built to analyze and understand the factors that influence the acceptance of technology use is the Technology Acceptance Model (TAM). Many studies have been conducted discussing TAM, one of which is research that states that TAM is an appropriate model for quantitative-based information management research (Opoku & Enu-Kwesi, 2020). Several empirical studies have been conducted in various domains to explore sustainable technology adoption (Al-Emran et al., 2018; Gharaibeh et al., 2018; Idoga et al., 2018; Mensah, 2020; Scherer et al., 2019).

The success of an information system being accepted by users depends on the user's interest in continuing to use the system. User satisfaction is an indicator that can be used to see whether users will continue to use the system offered. Much research has been conducted on user satisfaction. Research shows that there are essential factors in increasing user satisfaction with technology-based learning models. Although it is true that, in practice, developing the implementation of technology-based learning requires costs and time to implement, Technology-based learning activities encourage someone to use them; therefore, user satisfaction is an essential factor for individuals when using technology (Disastra & Wahyuningtyas, 2020).

Based on the explanation that has been presented, although many studies discuss LMS, TAM, and user satisfaction, especially in the implementation of technology-based learning, this research will discuss the acceptance of information technology as a distance education model so that it can be analyzed using the Technology Acceptance Model (TAM) model. Combined with factor analysis to determine the dominant indicators that influence student acceptance of distance learning technology so that we get an overview of UT's academic services in the form of the registration process, learning services via webinars, final semester exams, and assignment writing.

RESEARCH METHODS

This research uses a survey design; the subjects are all UT Postgraduate students entering semester 2021.2 (semester 1) in seven UT Postgraduate Study Programs, totaling 406 students. Sampling was carried out using a random sampling method for all UT postgraduate students. Sampling for interviews was carried out by considering the representation of the UT Distance Learning Program Unit. Data collection was carried out using questionnaires and interview guides for students. Questionnaires were distributed to respondents via email, Google Forms, and through research assistants in the UT Distance Learning Program Unit. Data deepening was conducted through interviews with several students via face-to-face meetings and video conferences.

Data was processed using SEM (Structural Equation Modeling) analysis techniques operated via LISREL 8.30. (a) Data analysis was carried out using

descriptive statistics, (b) outlier detection, and (c) outlier testing using a z-score (standard score) with a range of -3 to +3. Data quality testing was carried out by (a) validity testing using factor analysis. Construct validity tests were carried out on each variable. A question item is said to be valid if it has a factor loading value of more than 0.6; (b) reliability test using Cronbach's alpha statistical method. A construct has adequate reliability if the Cronbach's alpha value is greater than or equal to 0.6; (c) The normality test aims to test whether, in the multiple linear regression model, the dependent variable, independent variable, or both are typically distributed or not.

RESULTS AND DISCUSSIONS

1. Descriptive Analysis

This research was conducted on UT master's degree students, with 234 UT postgraduate students in all Study Programs as respondents. 55% male respondents and 45% female. The age range of the respondents ranged from 25-45 years. 89% of respondents are postgraduate students, and 11% are currently doctoral degree students at UT 15% of respondents are students who initially registered at UT before 2021, 60% initial registration in 2021, and 25% initial registration in 2022.

2. Validity and Reliability Test

The results of the reliability test show that all variables have a Cronbach alpha value greater than 0.70, meaning that reliability is met. The validity test shows that all corrected item-total correlations have a validity value above 0.30, meaning that all are valid.

3. Processing Results of Structural Equation Modeling (SEM) Models

a. Measurement Model Testing

Table 1 shows that the validity and reliability for all indicators on each latent variable are good because they fulfill the requirements for indicator validity with an SLF value ⩾ 0.50. The construct reliability value already meets a good CR value ⩾ 0.70. The variance extracted value has met the requirements for a good VE value ⩾ 0.50.

Table 1. The Results of Testing the Measurement Model

Indicator	SLF	ei	T-count	CR	VE	Indicator	SLF	ei	T-count	CR	VE
PEU1	0.83	0.32	73.19	**0.9817**	**0.7822**	**BIU1**	0.71	0.49	98.20	**0.9172**	**0.6145**
PEU2	0.91	0.17	80.04			**BIU2**	0.70	0.52	34.54		
PEU3	0.81	0.35	71.14			**BIU3**	0.81	0.35	37.39		
PEU4	0.85	0.28	74.98			**BIU4**	0.78	0.40	36.57		
PEU5	0.90	0.19	79.03			**BIU5**	0.81	0.35	37.23		
PEU6	0.91	0.16	80.29			**BIU6**	0.76	0.43	36.11		
PEU7	0.94	0.12	82.23			**BIU7**	0.91	0.17	39.32		
PEU8	0.94	0.11	82.38								
PEU9	0.91	0.16	80.31								
PEU10	0.86	0.25	76.14								
PEU11	0.89	0.21	78.29								
PEU12	0.88	0.22	77.73								

Indicator	SLF	ei	T-count	CR	VE	Indicator	SLF	ei	T-count	CR	VE
PEU13	0.86	0.25	76.15								
PEU14	0.85	0.28	74.80								
PEU15	0.90	0.19	79.08								
PU1	0.96	0.07	81.93	**0.9889**	**0.8993**	**AU1**	0.60	0.64	94.76	**0.9593**	**0.7056**
PU2	0.98	0.03	83.39			**AU2**	0.79	0.37	26.99		
PU3	0.98	0.03	83.40			**AU3**	0.67	0.55	25.25		
PU4	0.99	0.02	83.78			**AU4**	0.84	0.29	27.72		
PU5	0.97	0.05	82.75			**AU5**	0.93	0.13	28.35		
PU6	0.97	0.05	82.67			**AU6**	0.87	0.24	27.99		
PU7	0.95	0.10	80.38			**AU7**	0.94	0.12	28.39		
PU8	0.87	0.25	74.21			**AU8**	0.87	0.24	27.84		
PU9	0.78	0.37	68.40			**AU9**	0.90	0.19	28.11		
PU10	0.98	0.03	83.40								
ATU1	0.94	0.11	65.31	**0.9752**	**0.8312**						
ATU2	0.92	0.15	55.53								
ATU3	0.91	0.17	55.83								
ATU4	0.94	0.12	55.75								
ATU5	0.89	0.21	53.51								
ATU6	0.88	0.22	53.27								
ATU7	0.91	0.17	54.09								
ATU8	0.90	0.20	54.72								

*) SFL = Standardized Factor Loading, good SFL value ≥ 0.50
**) CR = Construct Reliability, a good CR value ≥ 0.70
***) VE = Variance Extracted, good VE value ≥ 0.50

b. Model Fit Test

Model fit test using RMSEA. Based on the study's results, the RMSEA value of the model tested was 0.0000 with a GFI value of 1.00, so overall, it can be concluded that the model tested is close to the absolute fit model test criteria at the level of good test criteria.

Table 2. Overall Results of Fit Test Model

Overall Model Fit Size	The calculation results	requirement	Information
Absolute fit Model			
Root Mean Square Error of Approximation (RMSEA)	0.066	≤ 0.08	*Good Fit*
Goodness of Fit Index (GFI)	0.99	≥ 0.90	*Good Fit*
Incremental Fit Model			
Comparative Fit Index (CFI)	1.00	≥ 0.90	*Good Fit*
Normed Fit Index (NFI)	0.99	≥ 0.90	*Good Fit*
Non-Normed Fit Index (NNFI)	0.99	≥ 0.90	*Good Fit*
Incremental Fit Index (IFI)	1.00	≥ 0.90	*Good Fit*
Relative Fit Index (RFI)	0.98	≥ 0.90	*Good Fit*
Parsimonious Fit Model			
Adjusted Goodness of Fit Index (AGFI)	0.95	≥ 0.90	*Good Fit*
Parsimony Goodness of Fit Index (PGFI)	0.70	≥ 0.50	*Good Fit*

Source: LISREL 2022 results

The incremental fit model fitness measure compares the proposed model with the basic model, which is often referred to as the null model or independence model, consisting of several test tools for compatibility, namely: (a) CFI, (b) NFI, (c) NNFI, (d) IFIs, (e) RFIs. Based on the research results CFI value = 1.00; NFI = 0.99; NNFI = 0.99; IFI = 1.00 and RFI = 0.98. then the model is said to be good because it is at the level of good test criteria.

In measuring the Parsimonius fit model, compare the proposed model with the basic model, namely the model where all the variables are independent or connecting the model with the estimated coefficients, namely those needed to achieve compatibility at that level. Following the principle of parsimony, or thrift, means obtaining the highest degree of fit for each degree of freedom, consisting of several test tools for compatibility, namely (a) AGFI and (b) PGFI. Based on the research results, the value of AGFI = 0.95 and PGFI = 0.70, the model is close to good because it is at good test criteria.

c. Structural Model Results

The results of the structural model are used to answer the research hypothesis. The output of the structural model consists of t count and standardized loading factor.

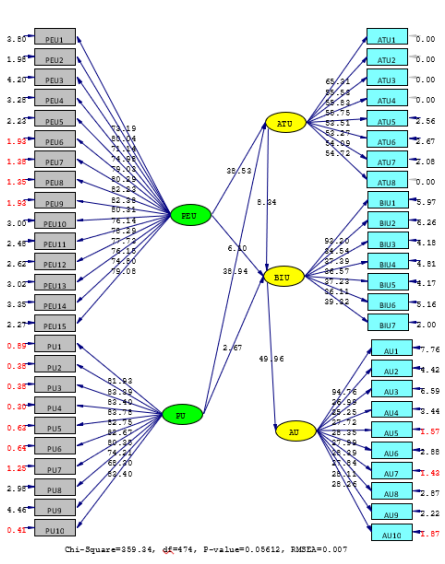

Figure 1. T-Count

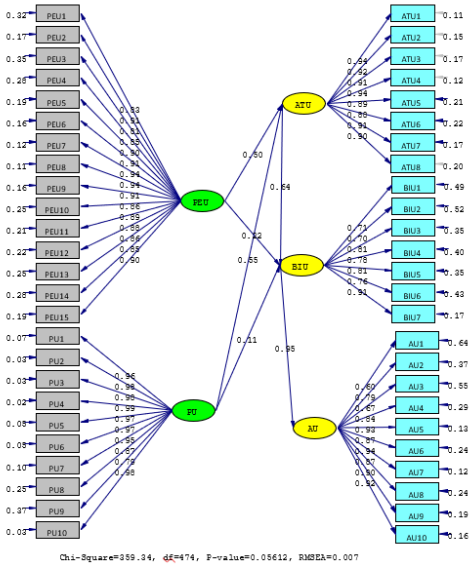

Figure 2. Standardized Loading Factor

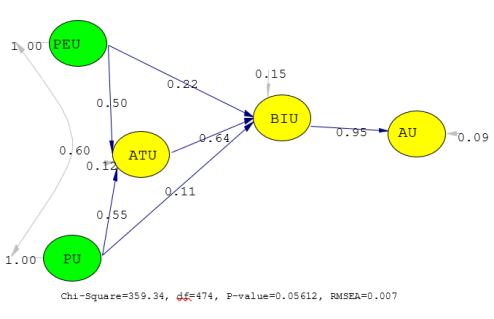

Figure 3. SLF Structural Model Hypothesis Test

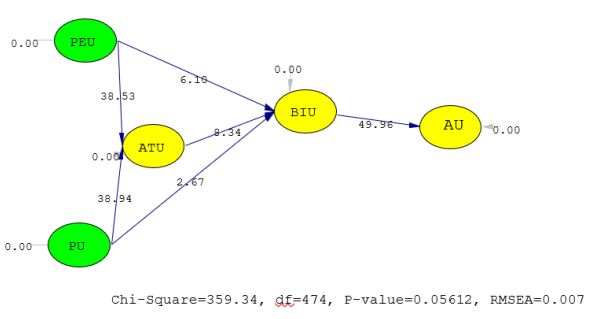

Figure 4. Hypothesis Test of T-count Structural Model

Table 3. Hypothesis Test Results

	Hypothesis	Standardized Loading Factor	T-count	Direction of Influence	Conclusion
H1	Perceived Ease of Use (PEU) → Attitude Toward Using (ATU)	0.50	38.53	Positive	Significant
H2	Perceived Usefulness (PU) → Attitude Toward Using (ATU)	0.55	38.94	Positive	Significant
H3	Perceived Ease of Use (PEU) → Behavioral Intention to Use (BIU)	0.22	6.10	Positive	Significant
H4	Perceived Usefulness (PU) → Behavioral Intention to Use (BIU)	0.11	2.67	Positive	Significant
H5	Attitude Toward Using (ATU) → Behavioral Intention to Use (BIU)	0.64	8.34	Positive	Significant
H6	Behavioral Intention to Use (BIU) → Actual Use (AU)	0.95	49.96	Positive	Significant

Note: significant because t-count > t-table 1.96

A study of student acceptance of distance learning using the Technology Acceptance Model (TAM) among Open University postgraduate students shows that the hypothesis is supported. The factors that influence technology acceptance significantly influence UT postgraduate students' acceptance of information technology in distance learning. The influencing factors include the registration process, learning services through webinars, final semester exams, and final assignment writing.

Other research discussing TAM in the field of education states that the large number of jobs related to TAM clearly shows the popularity of TAM in the field of technology acceptance in general. TAM and its various versions represent the model's credibility in facilitating the assessment of various learning technologies (Granić & Marangunić, 2019). Other research states that the credibility of the TAM model lies in facilitating various technology application criteria (Poellhuber et al., 2018). Meanwhile, other research states that electronic learning systems have a positive and significant effect on ESQ through student satisfaction. These findings contribute to university management's understanding of the need for service quality (Sholikah & Sutirman, 2020).

Perceived usefulness is defined as the degree to which an individual believes that using a particular system will help improve the individual's work performance. Based on this definition, the benefits of using ICT can help improve the performance and work performance of individuals who use it.

Regarding ICT, it can improve the performance and work performance of individuals who use it. This aligns with research that states that poor use of ICT affects student learning outcomes, and performance increases through innovative and collaborative use of ICT (Youssef et al., 2022). The impact of ICT on student learning achievement has been the subject of debate involving economists and educational scientists. Economic literature tends to emphasize the role of ICT-related equipment and its use to explain differences in performance among students, where the different results are due to problems with media use skills. Digital this is very surprising because skills in using digital media are considered a prerequisite for effective use of ICT in education (Hämäläinen et al., 2019; Ramirez et al., 2018).

Regarding the research results, the steps for taking part in distance education explained on the website are easy to remember, and the language is easy to understand. Apart from that, the most significant influence is that distance education through web applications in the learning process helps improve learning performance, and distance education using e-learning increases the refinement and storage of learning materials.

Other research states that the quality of e-learning services is a second-level construct that consists of three factors: the quality of the e-learning system, the e-learning infrastructure, and the quality of materials and administrative services(Pham et al., 2019).

As is happening now, in the information age, where the demand for knowledge is increasing, students are also expected to obtain more information to support and develop their learning process. Several universities have increasingly opened up the concept of e-learning, and now they are also integrating e-learning into their teaching. To accommodate various learning needs and provide more interactive material, making it easier to access information (Ayu, 2020)

The research results show that students enjoy learning using distance education methods, are enthusiastic about using the distance learning system, and check websites and other distance learning sources daily to look for learning information and do assignments.

Distance learning is a general term that groups all teaching modalities that do not require the direct presence of teachers and students in the classroom. Currently, distance learning is carried out through digital technology, which helps teachers and students share information at different places and at different times (Gurcan & Cagiltay, 2020; Naidu, 2020). Meanwhile, teachers and students must be aware of the critical role they play in influencing attitudes, motivation, and attention when designing distance learning activities (Anderson & Hira, 2020; Flack et al., 2020).

Research shows that distance learning only exists in educational institutions that implement distance learning, such as the Open University, but in universities in general. With advances in technology, completing academic studies can be done anywhere and at any time. This distance learning focuses on communication via computers, instructional design, educational technology, and learning outcomes. Apart from that, distance learning is seen as more economical because learning can be done at home. There are even research findings that state that distance learning can improve the quality of educational services. And student learning outcomes (Fan, 2021; Geng et al., 2019; Xiao, 2018).

CONCLUSION

Research on Acceptance of Distance Learning Technology Using the Technology Acceptance Model (TAM) in Postgraduate Students at the Open University shows that the variables measured have a significant effect on the use of distance learning technology. Postgraduate students at the Open University demonstrated that using technology in distance learning can improve learning achievement and performance. Students also believe that e-learning technology in distance learning improves the refinement and storage of learning materials so

they can access learning materials for a long time. The study results also show that students enjoy using distance learning technology, and students open the OU website daily to find learning information and do assignments at least once a day.

This research shows excellent attention from postgraduate students towards using information technology in distance education. This will require readiness from the Open University to improve distance education services through an integrated technology network, making it easier for users to access learning materials and educational services. Further research needs to be conducted on student satisfaction with using distance learning technology and other services students need. It can be accessed through learning technology developed on websites and other remote services.

ACKNOWLEDGEMENTS

The researcher would like to thank the entire academic community of Antasari State Islamic University, the Rector, Vice-Rector, Dean, Head of Study Program, and fellow lecturers who have assisted in this research.

REFERENCES

Al-Emran, Mezhuyev, & Kamaludin. (2018). Technology Acceptance Model in M-Learning Context: A Systematic Review. *Comput Educ*, *125*, 389–412. https://doi.org/10.1016/j.compedu.2018.06.008

Anderson, E., & Hira, A. (2020). Loss of Brick-and-Mortar Schooling: How Elementary Educators Respond. *Information and Learning Sciences*, *121*(5/6), 411–418. https://doi.org/10.1108/ILS-04-2020-0085

Ayouni, Menzel, Hajjej, Madden, & Al-Otaibi. (2021). Fuzzy Vikor Application for Learning Management Systems Evaluation in Higher Education. *Int. J. Inf. Commun. Technol. Educ*, *17*(2), 17–35. https://doi.org/10.4018/IJICTE.2021040102

Ayu, M. (2020). Online Learning: Leading E-Learning at Higher Education. *The Journal of English Literacy Education*, *7*(1), 47–54. https://doi.org/10.36706/jele.v7i1.11515

Disastra, G. M., & Wahyuningtyas, R. (2020). *User Satisfaction of E-Learning System Implementation for Training and Development Program in Organization*. *135*(Aicmbs 2019), 243–247. https://doi.org/10.2991/aebmr.k.200410.038

Dzuranin, Jones, & Olvera. (2018). Infusing Data Analytics into The Accounting Curriculum: A Framework and Insights from Faculty. *J. Account. Educ*, *43*, 24–39. https://doi.org/10.1016/j.jaccedu.2018.03.004

Fan, C. (2021). The Physical Learning Environment of Online Distance Learners in Higher Education – A Conceptual Model. *Frontiers in Psychology*, *12*(September). https://doi.org/10.3389/fpsyg.2021.635117

Flack, C. B., Walker, L., Bickerstaff, A., & Margetts, C. (2020). Socioeconomic Disparities in Australian Schooling during the Covid-19 Pandemic. *Pivot Professional Learning*.

Geng, S., Law, K. M., & Niu, B. (2019). Investigating Self-directed Learning and Technology Readiness in Blending Learning Environment. *International Journal of Educational Technology in Higher Education*, *16*(1), 17. https://doi.org/10.1186/s41239-019-0147-0

Gharaibeh, Arshad, & Gharaibh. (2018). Using the UTAUT2 Model to Determine Factors Affecting Adoption of Mobile Banking Services: A Qualitative Approach. *Int J Interact Mob Technol*, *2*(4), 123–134. https://doi.org/10.3991/ijim.v12i4.8525

Granić, A., & Marangunić, N. (2019). Technology Acceptance Model in Educational Context: A Systematic Literature Review. *British Journal of Educational Technology Submitted Article*, *July*, 1–40. https://doi.org/10.1111/bjet.12864

Gurcan, F., & Cagiltay, N. E. (2020). Research Trends on Distance Learning: A Text Mining-Based Literature Review from 2008 to 2018. *Interactive Learning Environments*. https://doi.org/10.1080/10494820.2020.1815795

Hämäläinen, R., DeWever, B., Nissinen, K., & Cincinnato, S. (2019). What Makes the Difference—PIAAC as A Resource for Understanding The Problem-Solving Skills of Europe's Higher-Education Adults. *Comput. Educ*, *129*, 27–36. https://doi.org/10.1016/j.compedu.2018.10.013

Idoga, Toycan, Nadiri, & Çelebi. (2018). Factors Affecting the Successful Adoption of e-Health Cloud based Health System from Healthcare Consumers' Perspective. *IEEE Access*, *6*(c), 71216–71228. https://doi.org/10.1109/ACCESS.2018.2881489

Kaewsaiha, & Chanchalor. (2021). Factors Affecting the Usage of Learning Management Systems in Higher Education. *Educ. Inf. Technol*, *26*(3), 2919–2939. https://doi.org/10.1007/s10639-020-10374-2

Mensah. (2020). Impact of Government Capacity and E-government Per Formance on the Adoption of E-Government Services. *Int J Public Adm*, *43*(4), 303–311. https://doi.org/10.1080/01900692.2019.1628059

Naidu, S. (2020). It is the worst—And the best—Of times! *Distance Education*, *41*(4), 425–428. https://doi.org/10.1080/01587919.2020.1825929

Opoku, M. O., & Enu-Kwesi, F. (2020). Relevance of The Technology Acceptance Model (TAM) in Information Management Research: A Review of Selected Empirical Evidence. *Pressacademia*, *7*(1), 34–44. https://doi.org/10.17261/Pressacademia.2020.1186

Oudeweetering, van de, & Voogt. (2018). Teachers' Conceptualization and Enactment of Twenty-First Century Competences: Exploring Dimensions for New Curricula. *Curric. J*, *29*(1), 116–133. https://doi.org/10.1080/09585176.2017.1369136

Pham, L., Limbu, Y. B., Bui, T. K., Nguyen, H. T., & Pham, H. T. (2019). Does E-Learning Service Quality Influence E-Learning Student Satisfaction and Loyalty? Evidence from Vietnam. *International Journal of Educational Technology in Higher Education*, *16*(1). https://doi.org/10.1186/s41239-019-0136-3

Picatoste, Pérez-Ortiz, & Ruesga-Benito. (2018). New Educational Pattern in Response to New Technologies and Sustainable Development. Enlightening ICT Skills for Youth Employability in the European Union. *Telemat. Informatics*, *35*(4), 1031–1038. https://doi.org/10.1016/j.tele.2017.09.014

Poellhuber, B., Fournier St-Laurent, S., & Roy, N. (2018). Using the TAM and Functional Analysis to Predict the Most Used Functions of an Active Learning Classroom (ALC). *Frontiers in ICT*, *5*. https://doi.org/10.3389/fict.2018.00008

Prahani, B. K., Alfin, J., Fuad, A. Z., Saphira, H. V., Hariyono, E., & Suprapto, N. (2022). Learning Management System (LMS) Research During 1991–2021: How Technology Affects Education. *International Journal of Emerging Technologies in Learning*, *17*(17), 28–49. https://doi.org/10.3991/ijet.v17i17.30763

Ramirez, G. ., Collazos, C. ., & Moreira, F. (2018). All-Learning: The State of The Art of The Models and The Methodologies Educational with ICT. *Telemat. Inform*, *35*, 944–953. https://doi.org/10.1016/j.tele.2017.10.004

Scherer, Siddiq, & Tondeur. (2019). The Technology Acceptance Model (TAM): A Meta-Analytic Structural Equation Modeling Approach to Explaining Teachers' Adoption of Digital Technology In Education. *Comput Educ*, *128*, 13–35. https://doi.org/10.1016/j.compedu.2018.09.009

Sholikah, M., & Sutirman, S. (2020). How Technology Acceptance Model (TAM) Factors of Electronic Learning Influence Education Service Quality Through Students' Satisfaction. *TEM Journal*, *9*(3), 1221–1226. https://doi.org/10.18421/TEM93-50

Williams. (2019). Does Competency-based Education with Blockchain Signal A New Mission for Universities? *J. High. Educ. Policy Manag*, *41*(1), 104–117. https://doi.org/10.1080/1360080X.2018.1520491

Xiao, J. (2018). On the margins or at the center? Distance education in higher education. *Distance Education*, *39*, 259–274. https://doi.org/10.1080/01587919.2018.1429213

Youssef, A. Ben, Dahmani, M., & Ragni, L. (2022). ICT Use , Digital Skills and Students ' Academic Performance : Exploring the Digital Divide. *MDPI Jorunal Information*, *13*(129), 1–19. https://doi.org/10.3390/info13030129